

FOUR HITHERTO UNDESCRIBED HEMIPTERA

BY E. P. VAN DUZEE

1. *Okanagana sperata* Van Duzee, n. sp.

Closely allied to *cruentifera* and *magnifica* but sufficiently distinct and best characterized by comparison. It has the prominent front of *cruentifera* and the heavily clouded apical wing veins of *magnifica*. Length to tip of abdomen 31 mm., expanse of wings 77 mm.

Head but slightly narrower than pronotum at anterior angles; vertex with a deep narrow groove between the ocelli, narrower and shallower in both the allied species; preocular area wanting the oblique grooves found in *magnifica*; supra-antennal plate produced distally in a prominent but obtuse angle, ending obliquely in both of the allied species. Front prominent as in *cruentifera* but less inflated, the expansion of the frontal groove more dorsal than in either of the allied species, and the anterior submarginal groove much deeper and narrower, the raised area behind it coarsely rugosely punctate as in *cruentifera* but wanting the coarse rugæ found in *magnifica*; median triangular posterior area flatter than in *cruentifera* and without the coarse rugæ found in *magnifica*; metanotum behind the scutellar X broader than in either of the other species. Wings as in *magnifica* (the right hind wing has but five apical areoles in place of the usual six, the left wing normal). Uncus as in *cruentifera*, wanting the small apical hook found in *magnifica*; valve long as in *magnifica* but more slender. Last ventral segment broadly, feebly arcuate at apex, its transverse depression deeper than in either of the allied species, broader and more nearly square and feebly sinuate in *magnifica*, more deeply excavated in *cruentifera*.

Color black; incised median line on vertex and anterior lobe of pronotum obscurely fulvous; costa nearly to apex of subcostal areole and basal membrane pale fulvous; narrow margin of dorsal segments 7 and 8 and extreme edge of preceding segments, widened laterally, broader margin of ventrals, last ventral segment except its broad base, valve except a lateral mark either side at base, and the legs pale orange; anterior femora black at apex, middle and hind femora and all tibiæ lineate with black, at least basally; veins of fore wings, except costal, black, the apical veins clouded with black to basad of the transverse veins; basal area brown, bordered with black.

Holotype, No. 3895, Calif. Acad. Sci. Ent., a unique male, taken by Mr. Sam Smith of Riverside on pine in the mountains west of Trinity Center near Carville, Trinity Co., California,

May 24, 1934, and kindly presented by him to the California Academy of Sciences.

The heavily infuscated tegminal veins will distinguish this from *cruentifera* and the more swollen front from *magnifica*. The conspicuous heavy vestiture found in *magnifica* is also prominent in this species. The comparison with *magnifica* is made with a paratype kindly sent to me by Mr. W. T. Davis.

2. *Banasa subcarnea* Van Duzee, n. sp.

Size and aspect of *calva* Say; croceous, tinged with red on the corium and sometimes on the head and pronotum; tergum sanguineous. Length 10-12 mm.

Head as long as in *calva* but less narrowed anteriorly, coarsely, deeply punctate, these punctures forming four lines on the base of the vertex, but feebly indicated in *calva*. Pronotum impressed within the latero-anterior margins leaving them distinctly explanate; surface coarsely punctured, the punctures distant on anterior field, closer posteriorly, forming a broken ring about the callosities. Apex of scutellum narrower and more produced than in *calva*; surface coarsely punctate, more closely toward the apex. Elytra coarsely punctate; membrane hyaline. Antennæ shorter and thicker than in *calva*; segment II three-fourths the length of III, IV and V subequal. Rostrum almost attaining hind margin of posterior coxæ. Male pygofer sinuate-truncate across the middle of the emarginate apical margin, this margin fringed with pale hairs. In *calva* this margin is subangularly emarginate with a heavier vestiture of pale hairs. Styles obtusely triangularly widened at apex with a narrow black edge, in *calva* rounded at apex, its apical margin broadly arcuate, laterally rectilinear, the inner angle rounded, in *calva* sinuate laterally forming a rounded lobe medially. Pectus with shallow punctures, the venter nearly smooth; ventral tubercle short and blunt as in *calva*.

Color ochraceous with the elytra largely sanguineous; edge of head, expanded margins and base of pronotum, base of scutellum, and costal margin of corium green; margin of abdomen slenderly green with a minute black tooth at apex of each segment; antennæ rufescent beyond middle of segment III, in *calva* the base of V is obviously paler.

Type, male, No. 3889, and allotype, female, No. 3890, Calif. Acad. Sci. Ent., taken August 26, 1927, at Cave Creek, Chiricahua Mts., Arizona, at 5,000 to 6,000 feet, by J. A. Kusche; paratypes numerous specimens taken at the same place, August 22-27, 1927, and on Washington Mts. near Nogales, Arizona, Septem-

ber 7, 1927, all taken by Mr. Kusche, and one pair taken by Mr. W. H. Mann in Ramsay Canyon, Huachuca Mts., Arizona.

I have seen this species determined as *subrufescens* Walker but that is a smaller species with shorter head, feebly arcuate latero-anterior pronotal margins, broader scutellum, etc. It can at once be distinguished from *subcarnea* by its having the apical margin of the basal plates of the female together broadly excavated. *Banasa induta* Stal from Brazil differs in its narrower head, less rugosely punctate surface and bicolored pronotum, the sides of which are but feebly depressed.

3. *Apateticus anataris* Van Duzee, n. sp.

Closely allied to *cynicus* Say, a little broader with less acute humeri and different male genitalia. Length, male 15, female 18 mm.

Head broader anteriorly than in *cynicus* with the sides sinuate; cheeks broad and rounded at apex, somewhat surpassing the tylus but not meeting before it, coarsely irregularly punctate, the punctures scarcely forming rows on the vertex, or only one row next the ocelli proximally; median length of pronotum one-third its humeral width; humeri subacute; surface coarsely rugosely punctate; antero-lateral margin feebly sinuate, coarsely dentate before the angulate humeri; scutellum very roughly irregularly punctate, more sparsely so at apex; discal area of elytra more sparsely finely punctate. Antennæ stouter than in *cynicus*; segment I not twice as long as thick, II longest, the proportionate lengths are 10:45:32:36:32, IV being just a little longer than III and V. Rostrum attaining base of hind coxæ; segments as 25:30:20:25; venter sparsely weakly punctured. Median plate of female genital segment quadrangular as in *cynicus*. Male genital characters very distinct; ventral claspers produced obliquely from a broad flattened base in a long straight linear tongue as long as rostral segment III; dorsal clasper flat, vertical for half its length then abruptly bent outwardly at apex and produced in a nearly terete black member, giving it a little the aspect of a duck's head when viewed from below; lateral papillose plates almost triangular, more produced than in the related species.

Color a paler yellowish than is general in related species, somewhat tinged with red on the elytra, punctures castaneous to black, a few of a metallic green on base of vertex and at outer end of callosities, the humeral angles and a square spot on the connexivum either side of the sutures metallic green, reproduced as a black line below; membrane somewhat fuliginous.

Holotype, male, No. 3891, and allotype, female, No. 3892, Calif. Acad. Sci. Ent., taken by Dr. E. D. Ball, July 23, 1932, on the Santa Catalina Mts., Arizona.

The extent of the green puncturation on the base of the pronotum and scutellum undoubtedly varies in this species as it does in *bracteatus* but it is merely suggested in this pair, which, however, have the humeral angles conspicuously green. The square median plate of the genital segment places this species near *cynicus*, from which it differs widely in the form of the male claspers. Our other two species, *bracteatus* and *crocatus*, if I have them properly identified, differ much from these but agree between themselves in the triangular form of the median genital plate of the female and the form of the male claspers, and may not be specifically distinct from one another.

This is but one of the many interesting Hemiptera turned up by Dr. Ball during his investigations of the insect fauna of Arizona. Few states have a more interesting insect fauna than Arizona, due in part to the fact that Mexican representatives of the lower Sonoran fauna there reach the northern limits of their distribution.

4. *Malezonotus grossus* Van Duzee, n. sp.

Allied to *sodalicius* Uhl. but larger and broader with black femora and the antennæ, except the first segment, brown. Length 5.5-6.5 mm.'

Head more opaque than in *sodalicius*, without the bronzy glint found in that species. Antennæ thicker, clothed with minute pale pubescence; length of segments as 6:18:15:16; segment I with a few stiff bristles. Pronotum as long as broad measured near the humeral angles; surface shagreened, the posterior lobe very obscurely punctate, its length about one-third that of the anterior lobe. Scutellum one-fourth broader than long. Clavus with three regular rows of punctures and a few scattering ones between the inner rows; corium irregularly punctured, the punctures fine, closer and infuscated along the median area; membrane more or less embrowned, with fuscous nervures. Rostrum attaining base of middle coxæ. Anterior femora strongly incrassate, with one stout subapical tooth and one or two minute ones. Tibiæ spinose as in the allied species. Whole surface minutely golden pubescent.

Color dull black; lateral and posterior margins of pronotum with a connecting humeral spot, extreme tip of the scutellum and the elytra yellowish or ochraceous, the punctures on the latter

brown except on the costal area; median area infuscated as in the allied species; beneath black, polished on the venter; tip of tylus, antennal I and apex of II, acetabulæ, coxæ in part, trochanters, apex of femora and the anterior and intermediate tibiæ fulvous yellow; rostrum fulvous, becoming piceous at base and apex; eyes castaneous. Described from a series of fourteen females.

Holotype, female, No. 3893, Calif. Acad. Sci. Ent., and 10 paratypes taken at Potwisha, Sequoia National Park, California, June 13-20, 1929, Crescent Meadows, Sequoia National Park, June 19, 1929, and Homestead Inn, Mt. Hood, Oregon, July 6, 1927, all by Dr. E. C. Van Dyke. Big Bend Mountain, Butte Co., California, May 23, 1928, H. H. Keifer.

This is a larger, slightly broader and a darker species than *sodalicius* from which it may be superficially distinguished by the polished black femora. The color of the antennæ is subject to much variation.

SOME RECENT NEUROPTEROID PAPERS

BY E. P. VAN DUZEE

Perhaps the most important entomological event in this country since the appearance of our last issue is the publication of Dr. Cornelius Betten's Report on the caddisflies of New York State which has been issued as Bulletin 292 of the New York State Museum. For 17 years our entomologists have been waiting, sometimes I fear with scant patience, for the appearance of this important paper. It makes a book of some 500 pages with 67 carefully drawn plates. Like the preceding reports in this series on the aquatic insects of New York State it is altogether a credit to the museum issuing it. It is certainly a pity it could not have been published 17 years earlier when it was first submitted to the Regents of the Museum, so our workers could have had a foundation to build upon. However we all are thankful that it is now available. This work lists 568 species about one-half of which are from east of the Mississippi River, the balance being western. It may be a surprise to many not acquainted with the literature of this order that over 300 of the species have been described by Dr. Nathan Banks. The balance are by various authors, including 18 described as new in this report. The systematic portion fills about four-fifths of the work. In this section there are keys to the families and genera, with